What is claimed is:

1. A thin film semiconductor device, comprising:

a flexible substrate;

a semiconductor chip, which is formed on the flexible substrate; and

a protective cap, which seals the semiconductor chip.

2. The thin film semiconductor device as claimed in claim 1, wherein the tensile strength of the protective cap is greater than about 30 GPa.

3. The thin film semiconductor device as claimed in claim 1, wherein the hardness of the protective cap is greater than about 200.

4. The thin film semiconductor device as claimed in claim 1, wherein the protective cap is formed on an upper surface of the semiconductor device.

5. The thin film semiconductor device as claimed in claim 1, wherein the protective cap is formed on an upper surface of the semiconductor chip and between the semiconductor chip and the flexible substrate.

6. The thin film semiconductor device as claimed in claim 1, wherein the semiconductor chip is one selected from the group consisting of a thin film transistor (TFT), a thin film diode (TFD), and a metal insulator metal (MIM).

7. The thin film semiconductor device as claimed in claim 1, wherein the protective cap is formed of one selected from the group consisting of an ultraviolet curing resin, an X-ray curing material, an electronic beam curing material, and an ion beam curing material.

8. The thin film semiconductor device as claimed in claim 1, wherein the flexible substrate is formed of one selected from the group consisting of plastic and a thin metal film.

9. The thin film semiconductor device as claimed in claim 1, wherein the flexible substrate is a glass substrate having a thickness less than about 100 μm.

10. An electronic device including a flexible substrate and a semiconductor chip formed on the flexible substrate, the electronic device comprising a protective cap that seals the semiconductor chip.

11. The electronic device as claimed in claim 10, wherein the tensile strength of the protective cap is greater than about 30 GPa.

12. The electronic device as claimed in claim 10, wherein the hardness of the protective cap is greater than about 200.

13. The electronic device as claimed in claim 10, wherein the protective cap is formed on an upper surface of the semiconductor chip.

14. The electronic device as claimed in claim 10, wherein the protective cap is formed on an upper surface of the semiconductor chip and between the semiconductor chip and the flexible substrate.

15. The electronic device as claimed in claim 10, wherein the semiconductor chip is one selected from the group consisting of a thin film transistor (TFT), a thin film diode (TFD), and a metal insulator metal (MIM).

16. The electronic device as claimed in claim 10, wherein the protective cap is formed of one selected from the group consisting of an ultraviolet curing resin, an X-ray curing material, an electronic beam curing material, and an ion beam curing material.

17. The electronic device as claimed in claim 10, wherein the flexible substrate is formed of one selected from the group consisting of plastic and a thin metal film.

18. The electronic device as claimed in claim 10, wherein the flexible substrate is a glass substrate having a thickness less than about 100 μm.

19. The electronic device as claimed in claim 10 further comprising a liquid crystal display (LCD) or an organic light emitting diode (OLED) connected to the semiconductor chip.

20. A manufacturing method of an electronic device, comprising:

(a) manufacturing a thin film semiconductor chip on a flexible substrate;

(b) coating a protective cap to seal the semiconductor chip;

(c) depositing an insulating layer on the substrate to cover the protective cap;

(d) forming a contact hole that penetrates the insulating layer and the protective cap; and

(e) forming an electrode to be electrically connected to the semiconductor chip through the contact hole, and forming a driving unit on the electrode, the driving unit being driven by the semiconductor chip.

21. The method as claimed in claim 20, wherein the tensile strength of the protective cap is greater than about 30 GPa.

22. The method as claimed in claim 20, wherein the hardness of the protective cap is greater than about 200.

23. The method as claimed in claim 20, wherein the flexible substrate is formed of one selected from the group consisting of plastic and a thin metal film.

24. The method as claimed in claim 20, wherein the flexible substrate is a glass substrate having a thickness less than about 100 μm.

25. The method as claimed in claim 20, wherein the semiconductor chip is one selected from the group consisting of a thin film transistor (TFT), a thin film diode (TFD), and a metal insulator metal (MIM).

26. The method as claimed in claim 20, wherein the driving unit is a pixel unit of an LCD.

27. The method as claimed in claim 20, wherein the driving unit is a pixel unit of an OLED.

28. The method as claimed in claim 20, wherein the protective cap is formed of one selected from the group consisting of an ultraviolet curing resin, an X-ray curing material, an electronic beam curing material, and an ion beam curing material.

29. The method as claimed in claim 20, wherein (b) comprises:

spin coating the ultraviolet curing resin onto the semiconductor chip;

baking the ultraviolet curing resin at a low temperature and radiating ultraviolet rays to a predetermined portion of the ultraviolet curing resin to cure a portion of the ultraviolet curing resin; and

performing a development process to remove the remaining ultraviolet curing resin, and performing a heating process at a high temperature to form the protective cap.

30. The method as claimed in claim 29, wherein (c) comprises depositing an insulating layer on the substrate after performing an argon plasma process on the protective cap.

31. A manufacturing method of an electronic device, the method comprising:

(a) manufacturing a thin film semiconductor chip on a flexible substrate;

(b) coating a protective cap to seal the semiconductor chip;

(c) forming a contact hole that penetrates the protective cap in the upper surface of the semiconductor chip; and

(d) forming an electrode to be electrically connected to the semiconductor chip through the contact hole, and forming a driving unit on the electrode, the driving unit being driven by the semiconductor chip.

32. The method as claimed in claim 31, wherein the tensile strength of the protective cap is greater than about 30 GPa.

33. The method as claimed in claim 31, wherein the hardness of the protective cap is greater than about 200.

34. The method as claimed in claim 31, wherein the flexible substrate is formed of any one of plastic and a thin metal film.

35. The method as claimed in claim 31, wherein the flexible substrate is a glass substrate having a thickness less than about 100 μm.

36. The method as claimed in claim 31, wherein the semiconductor chip is one selected from the group consisting of a thin film transistor (TFT), a thin film diode (TFD), and a metal insulator metal (MIM).

37. The method as claimed in claim 31, wherein the driving unit is a pixel unit of an LCD.

38. The method as claimed in claim 31, wherein the driving unit is a pixel unit of an OLED.

39. The method as claimed in claim 31, wherein the protective cap is formed of one selected from the group consisting of an ultraviolet curing resin, an X-ray curing material, an electronic beam curing material, and an ion beam curing material.

40. The method as claimed in claim 31, wherein (b) comprises:

spin coating the ultraviolet curing resin on the semiconductor chip;

baking the ultraviolet curing resin at a low temperature and radiating ultraviolet rays to a predetermined portion of the semiconductor chip to cure a portion of the ultraviolet curing resin; and

performing a development process to remove the remaining ultraviolet curing resin, and performing a heating process at a high temperature to form the protective cap.

41. A manufacturing method of an electronic device, comprising:

(a) coating a first protective cap on a flexible substrate and patterning the first protective cap into a predetermined pattern;

(b) manufacturing a thin film semiconductor chip on the first protective cap;

(c) coating a second protective cap on the substrate to seal the semiconductor chip;

(d) depositing an insulating layer on the second protective cap and the substrate;

(e) forming a contact hole that penetrates the insulating layer and the second protective cap; and

(f) forming an electrode to be electrically connected to the semiconductor chip through the contact hole, and forming a driving unit on the electrode, the driving unit being driven by the semiconductor chip.

42. The method as claimed in claim 41, wherein the tensile strength of each of the first and second protective caps is greater than about 30 GPa.

43. The method as claimed in claim 41, wherein the hardness of each of the first and second protective caps is greater than about 200.

44. The method as claimed in claim 41, wherein the flexible substrate is formed of one selected from the group consisting plastic and a thin metal film.

45. The method as claimed in claim 41, wherein the flexible substrate is a glass substrate having a thickness less than about 100 μm.

46. The method as claimed in claim 41, wherein the semiconductor chip is one selected from the group consisting of a thin film transistor (TFT), a thin film diode (TFD), and a metal insulator metal (MIM).

47. The method as claimed in claim 41, wherein the driving unit is a pixel unit of an LCD.

48. The method as claimed in claim 41, wherein the driving unit is a pixel unit of an OLED.

49. The method as claimed in claim 41, wherein the first and second protective caps are formed of one selected from the group consisting of an ultraviolet curing resin, an X-ray curing material, an electronic beam curing material, and an ion beam curing material.

50. The method as claimed in claim 49, wherein the ultraviolet curing resin is one selected from the group consisting of an acrylic resin and an epoxy resin.

51. The method as claimed in claim 41, wherein (a) comprises:

spin coating an ultraviolet curing resin on the substrate;

baking the ultraviolet curing resin at a low temperature and radiating ultraviolet rays to a predetermined portion of the substrate to cure a portion of the ultraviolet curing resin; and

performing a development process to remove the remaining ultraviolet curing resin, and performing a heating process at a high temperature to pattern the first protective cap.

52. The method as claimed in claim 51, wherein (b) comprises manufacturing the thin film semiconductor chip after performing an argon plasma process on the first protective cap.

53. The method as claimed in claim 41, wherein (c) comprises:

spin coating an ultraviolet curing resin on the semiconductor chip;

baking the ultraviolet curing resin at a low temperature and radiating ultraviolet rays to a predetermined portion of the semiconductor chip to cure a portion of the ultraviolet curing resin; and

performing a development process to remove the remaining ultraviolet curing resin, and performing a heating process at a high temperature to form the second protective cap.

54. The method as claimed in claim 53, wherein (d) comprises depositing the insulating layer after performing an argon plasma process on the second protective cap.

55. A manufacturing method of an electronic device, comprising:

(a) coating a first protective cap on a flexible substrate and patterning the first protective cap into a predetermined pattern;

(b) manufacturing a thin film semiconductor chip on the first protective cap;

(c) coating a second protective cap on the substrate to seal the semiconductor chip;

(d) forming a contact hole that penetrates the second protective cap; and

(e) forming an electrode to be electrically connected to the semiconductor chip through the contact hole, and forming a driving unit on the electrode, the driving unit being driven by the semiconductor chip.

56. The method as claimed in claim 55, wherein the tensile strength of each of the first and second protective caps is greater than about 30 GPa.

57. The method as claimed in claim 55, wherein the hardness of each of the first and the second protective caps is greater than about 200.

58. The method as claimed in claim 55, wherein the flexible substrate is formed of one selected from the group consisting of plastic and a thin metal film.

59. The method as claimed in claim 55, wherein the flexible substrate is a glass substrate having a thickness less than about 100 μm.

60. The method as claimed in claim 55, wherein the semiconductor chip is one selected from the group consisting of a thin film transistor (TFT), a thin film diode (TFD), and a metal insulator metal (MIM).

61. The method as claimed in claim 55, wherein the driving unit is a pixel unit of an LCD.

62. The method as claimed in claim 55, wherein the driving unit is a pixel unit of an OLED.

63. The method as claimed in claim 55, wherein the first and second protective caps are formed of one selected from the group consisting of an ultraviolet curing resin, an X-ray curing material, an electronic beam curing material, and an ion beam curing material.

64. The method as claimed in claim 55, wherein (a) comprises:

spin coating an ultraviolet curing resin on the substrate;

baking the ultraviolet curing resin at a low temperature and radiating ultraviolet rays to a predetermined portion of the substrate to cure a portion of the ultraviolet curing resin; and

performing a development process to remove the remaining ultraviolet curing resin, and performing a heating process at a high temperature to pattern the first protective cap.

65. The method as claimed in claim 64, wherein (b) comprises manufacturing the thin film semiconductor chip after performing an argon plasma process on the first protective cap.

66. The method as claimed in claim 65, wherein (c) comprises:

spin coating the ultraviolet curing resin on the semiconductor chip;

baking the ultraviolet curing resin at a low temperature and radiating ultraviolet rays to a predetermined portion of the semiconductor chip to cure a portion of the ultraviolet curing resin; and

performing a development process to remove the remaining ultraviolet curing resin, and performing a heating process at a high temperature to form the second protective cap.